

AMENDMENTS TO THE CLAIMS

Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Claim 1 (Currently Amended): A process for producing a sealant comprising the step of:
contacting in a reactor under reaction conditions
a polymer comprising at least one vinyl, acrylate, or methacrylate monomer and at least one silane comonomer,
at least one polymer capping agent,
a catalyst, and
a reactive diluent, wherein the reactive diluent is an alkylene carbonate.

Claim 2 (Cancelled):

Claim 3 (Cancelled):

Claim 4 (Original): The process of claim 1, wherein the silane comonomer of the polymer is selected from the group consisting of methyl trimethoxysilane, methyl triethoxysilane, octyl triethoxysilane, methyl trioximinosilane, vinyl trimethoxysilane, vinyltriethoxysilane, vinyltris (2-methoxyethoxy) silane, 3-[tris (trimethylsiloxy) silyl] propyl methacrylate, vinyl methyldimethoxy silane, vinyl methyldiethoxy silane, vinylphenyldimethoxysilane vinyl oximino silane, and mixtures thereof.

Claim 5 (Original): The process of claim 1, wherein the silane comonomer is a mixture of methyl trimethoxysilane and vinyl trimethoxysilane.

Claim 6 (Original): The process of claim 1, wherein the vinyl, acrylate, or methacrylate monomer is substantially linear.

Claim 7 (Original): The process of claim 1, wherein the acrylate monomer is selected from the group consisting of methyl acrylate, ethyl acrylate, butyl acrylate, 2-ethyl hexyl acrylate, and mixtures thereof.

Claim 8 (Original): The process of claim 1, wherein the methylacrylate monomer is selected from the group consisting of lauryl methacrylate, methyl methacrylate, ethyl methacrylate, butyl methacrylate octyl methacrylate and stearyl methacrylate, and mixtures thereof.

Claim 9 (Original): The process of claim 1, wherein the vinyl monomer is selected from the group consisting of vinyl acetate, acrylonitrile, methacrylonitrile, styrene, dioctyl fumarate, dioctyl maleate and maleic anhydride.

Claim 10 (Original): The process of claim 1, wherein the monomer comprises butylacrylate, methylacrylate, and lauryl methacrylate.

Claim 11 (Original): The process of claim 1, wherein the polymer capping agent is an alkoxy silane.

Claim 12 (Original): The process of claim 1, wherein the polymer capping agent is selected from the group consisting of mercapto – containing alkoxy silanes, g-glycidoxypropyltrimethoxysilane and mixtures thereof.

Claim 13 (Original): The process of claim 1, wherein the sealant contains in the range from about 90 to about 99 weight percent solid yield.

Claim 14 (Original): The process of claim 1, wherein the sealant contains in the range of from about 95 to about 99 weight percent solid yield.

Claim 15 (Original): The process of claim 1, wherein the sealant contains in the range of at least 98 weight percent solid yield.

Claim 16 (Original): The process of claim 1, wherein the sealant contains a glass peel cohesive failure (CF) value in the range of from about 16 to 36 pounds-force per inch of width, and an aluminum peel adhesive failure (AF) value in the range of from about 8.75 to about 28.75 pounds-force per inch of width.

Claim 17 (Original): The process of claim 1, wherein the polymer has a molecular weight in the range of from about 50,000 g/mol to about 150,000 g/mol.

Claim 18 (Original): The process of claim 1, wherein the sealant has a viscosity in the range of from about 1000 to about 50,000 Centipose and determined using a 70% solution in toluene at room temperature.

Claim 19 (Original): The process of claim 1, wherein the catalyst is a mixture of t-butyl peroctoate, toluene, and dioctyl tin dilaurate.

Claim 20 (Currently Amended): A sealant composition comprising:

a polymer comprising at least one vinyl, acrylate or methacrylate monomer and at least one silane comonomer,

at least one polymer capping agent,

a catalyst, and

a byproduct of a reactive diluent, wherein the reactive diluent is an alkylene carbonate.

Claim 21 (Original): The sealant of claim 20, further comprising an additive.

Claim 22 (Original): The sealant of claim 21, wherein the additive comprises fumed silica, g-glycidoxypropyltrimethoxysilane, and a wetting agent.

Claim 23 (Cancelled):

Claim 24 (Cancelled):

Claim 25 (Original): The sealant of claim 20, wherein the silane comonomer of the polymer is selected from the group consisting of methyl trimethoxysilane, methyl triethoxysilane, octyl triethoxysilane, methyl trioximinosilane, vinyl trimethoxysilane, vinyltriethoxysilane, vinyltris (2-methoxyethoxy) silane, 3-[tris (trimethylsiloxy) silyl] propyl methacrylate, vinyl methyldimethoxy silane, vinyl methyldiethoxy silane, vinylphenyldimethoxysilane vinyl oximino silane, and mixtures thereof.

Claim 26 (Original): The sealant of claim 20, wherein the silane comonomer is a mixture of methyltrimethoxysilane and vinyl trimethoxysilane.

Claim 27 (Original): The sealant of claim 20, wherein the vinyl, acrylate, or methacrylate monomer is substantially linear.

Claim 28 (Original): The sealant of claim 20, wherein the acrylate monomer is selected from the group consisting of methyl acrylate, ethyl acrylate, butyl acrylate, 2-ethyl hexyl acrylate, and mixtures thereof.

Claim 29 (Original): The sealant of claim 20, wherein the methylacrylate monomer is selected from the group consisting of, lauryl methacrylate, methyl methacrylate, ethyl methacrylate, butyl methacrylate octyl methacrylate and stearyl methacrylate, and mixtures thereof.

Claim 30 (Original): The sealant of claim 20, wherein the vinyl monomer is selected from the group consisting of vinyl acetate, acrylonitrile, methacrylonitrile, styrene, dioctyl fumarate, dioctyl maleate and maleic anhydride.

Claim 31 (Original): The sealant of claim 20, wherein the monomer comprises butylacrylate, methylacrylate, and lauryl methacrylate.

Claim 32 (Original): The sealant of claim 20, wherein the polymer capping agent is an alkoxy silane.

Claim 33 (Original): The sealant of claim 20, wherein the polymer capping agent is selected from the group consisting of mercapto – containing alkoxy silanes, g-glycidoxypolytrimethoxy silane, and mixtures thereof.

Claim 34 (Original): The sealant of claim 20, wherein the sealant contains in the range of from about 90 to about 99 weight percent solid yield.

Claim 35 (Original): The sealant of claim 20, wherein the sealant contains in the range of from about 95 to about 99 weight percent solid yield.

Claim 36 (Original): The sealant of claim 20, wherein the sealant contains in the range of at least 98 weight percent solid yield.

Claim 37 (Original): The sealant of claim 20, wherein the sealant has a glass peel cohesive failure (CF) value in the range of from about 16 to 36 pounds-force per inch of width, and an aluminum peel adhesive failure (AF) value in the range of from about 8.75 to about 28.75 pounds-force per inch of width.

Claim 38 (Original): The sealant of claim 20, wherein the polymer contains a molecular weight in the range of from about 50,000 g/mol to about 150,000 g/mol.

Claim 39 (Original): The sealant of claim 20, wherein the sealant contains a viscosity in the range of from about 1000 to about 50,000 Centipose and determined using a 70% solution in toluene at room temperature.

Claim 40 (Original): The sealant of claim 20, wherein the catalyst is a free radical genemitor selected from the group consisting of azo, peroxide, and hydroperoxide catalysts, and mixtures thereof.

Claim 41 (Original): The sealant of claim 20, wherein the catalyst is a mixture of t-butyl peroctoate, toluene, and dioctyl tin dilaurate.